

IN THE CLAIMS:

Please amend the following claims:

1. (Currently Amended) A process for the wet fractionation of oil seed press cake and/or meal, ~~[characterized in that]~~ wherein oil seed press cake or meal is dispersed in water and subjected to a combined treatment of wet milling, enzymes and heat, followed by a sequential fractionation at an elevated temperature using centrifugal forces and size exclusion (ultrafiltration) so as to yield one or more fibrous-rich fractions, at least three different protein-rich fractions, optionally an oil-rich fraction, a sugar-rich fraction and a phytate-rich fraction, followed by a final step consisting of drying or partial evaporation of the above-said fractions.
2. (Currently Amended) A process according to claim 1, wherein oil seed press cake or meal is the residual fibrous-protein fraction obtained from conventional oil extraction processes of oil seeds of the type Soya, rapeseed, cottonseed, sunflower, linseed and flax seed.
3. (Currently Amended) A process according to ~~[claims 1-2]~~ claim 1, wherein the combination of wet milling, enzymatic and heat treatment is carried out to achieve a high efficiency in the subsequent fractionation of the main components of oilseed press-cake and meal, i.e. fibre, protein, oil, sugars and phytate, and that an extraction rate of both protein, residual fat and phytate of at least 70% from the original material is achieved.
4. (Currently Amended) A process according to ~~[claims 1-3]~~ claim 1, wherein the enzymatic treatment is accomplished by using one or a combination of more than one of the following enzymes; beta-glucanase, xylanase, hemicellulase, arabinase and pectinase.
5. (Currently Amended) A process according to claim 1, wherein an enzyme inactivation step is

carried out prior to the fractionation step or drying step.

6. (Currently Amended) A protein fraction obtained in accordance with the process of [~~claims 1-5~~] claim 1, wherein the said fraction is provided in a dry form with at least 88% dry matter, and it is comprised of one or more protein fractions produced in the said process, and it contains 30 to 95% protein, and 1 to 60% oil.

7. (Currently Amended) A protein fraction obtained in accordance with the process of [~~claims 1-4~~] claim 1, wherein the said fraction is provided in a dry form with at least 88% dry matter, and it is comprised of one or more protein fractions produced in the said process, and it contains 30 to 95% protein, 1 to 60% oil, and it contains active enzymes of the type used in the process.

8. (Currently Amended) An oil fraction obtained in accordance with the process of [~~claims 1-5~~] claim 1, wherein the said fraction is provided as an emulsified oil, and it is comprised of one or two oil fractions produced in the said process, and it contains at least 60% fat, and less than 30% protein.

9. (Currently Amended) An oil fraction obtained in accordance with the process of [~~claims 1-4~~] claim 1, wherein the said fraction is provided as an emulsified oil, and it is comprised of one or two oil fractions produced in the said process, and it contains at least 60% fat, and less than 30% protein, and it contains active enzymes of the type used in the process.

10. (Currently Amended) A fibre fraction obtained in accordance with the process of [~~claims 1-5~~] claim 1, wherein the said fraction [~~is~~] provided in a dry form with at least 88% dry matter, and it is comprised of at least 50% fibre, 15% protein and 10% fat.

11. (Currently Amended) A fibre fraction obtained in accordance with the process of [~~claims 1-4~~] claim 1, wherein the said fraction [~~is~~] provided in a dry form with at least 88% dry matter, and it is comprised of at least 50% fibre, 15% protein and 10% fat, and it contains active enzymes of the type used in the process.

12. (Currently Amended) A sugar fraction obtained in accordance with the process of [~~claims 1-5~~] claim 1, wherein the said fraction [~~is~~] provided in a syrup form with at least 75% dry matter, and it consists of at least 50% neutral and acidic sugars.

13. (Currently Amended) A sugar fraction obtained in accordance with the process of [~~claims 1-4~~] claim 1, wherein the said fraction [~~is~~] provided in a syrup form with at least 75% dry matter, and it consists of at least 50% neutral and acidic sugars, and it contains active enzymes of the type used in the process.

14. (Currently Amended) A phytate fraction obtained in accordance with the process of [claims 1-5] claim 1, wherein the said fraction [~~is~~] provided in a dry form and contains 30 to 80% phytate.

15. (Currently Amended) The use of a protein fraction, as described in claim 6, in food or feed applications as a protein ingredient or functional protein to replace other protein products from vegetable, animal and microbial sources.

16. (Currently Amended) The use of a protein fraction, as described in claim 7, in feed applications as a protein ingredient to replace other protein products from vegetable, animal and microbial sources, with active enzymes used in the process for enhanced nutritive value.

17. (Currently Amended) The use of an oil fraction, as described in claim 8, in food or feed applications as a fat substitute or emulsifier to replace other fat products from vegetable and animal sources.

18. (Currently Amended) The use of an oil fraction, as described in claim 9, in feed applications as a fat substitute or emulsifier to replace other fat products from vegetable and animal sources, with active enzymes used in the process for enhanced nutritive value.

19. (Currently Amended) The use of a fibre fraction, as described in claim 10, in feed applications as a balanced feed ingredient.

20. (Currently Amended) The use of a fibre fraction, as described in claim 11, in feed applications as a balanced feed ingredient, with active enzymes used in the process for enhanced nutritive value.

21. (Currently Amended) The use of a syrup fraction, as described in claim 12, in feed applications as an energy source or a compound feed binder, or as a media for microbial fermentation.

22. (Currently Amended) The use of a syrup fraction, as described in claim 13, in feed applications as an energy source or compound feed binder, with active enzymes used in the process for enhanced nutritive value.

23. (Currently Amended) The use of a phytate fraction, as described in claim 14, in food and feed applications as an anti-oxidant and taste enrichment agent and in nutraceutical / cosmoceutical / pharmaceutical applications as a cancer-preventing, urinary calculi-preventing and bacterial tooth plaque-preventing agent.

24. (Currently Amended) The use of a phytate fraction, as described in claim 14, in nutraceutical / cosmoceutical / pharmaceutical applications as a cancer-preventing.

25. (Currently Amended) The use of a phytate fraction, as described in claim 14, in nutraceutical / cosmoceutical/ pharmaceutical applications as a urinary calculi-preventing agent.

26. (Currently Amended) The use of a phytate fraction, as described in claim 14, in nutraceutical / cosmoceutical / pharmaceutical applications as a bacterial tooth plaque-preventing agent.

27. (Currently Amended) A set up for carrying out the process according to[claims 1-5] claim 1, [~~characterized in that~~] wherein it comprises a hydrolysis and heat treatment vessel [(1)], a wet mill [(2)], a heat exchanger [(3)] for enzymatic inactivation, mixing tanks [(7, 9 and 12)], decanters [(4 and 8)], dseparators [(11 and 13)], an ultra-filter [(9)], and evaporator [(10)], and

dryers [(5, 6 and 14)].